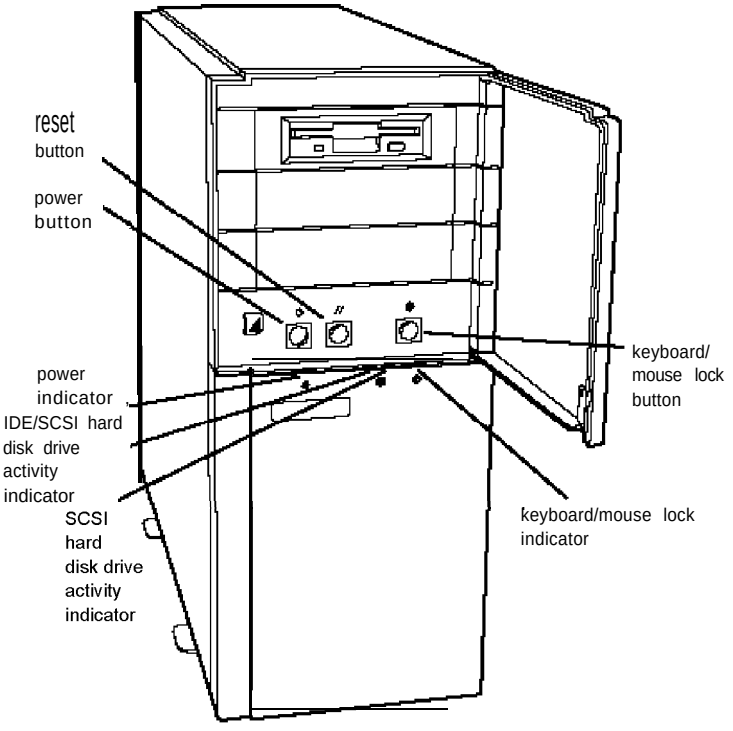
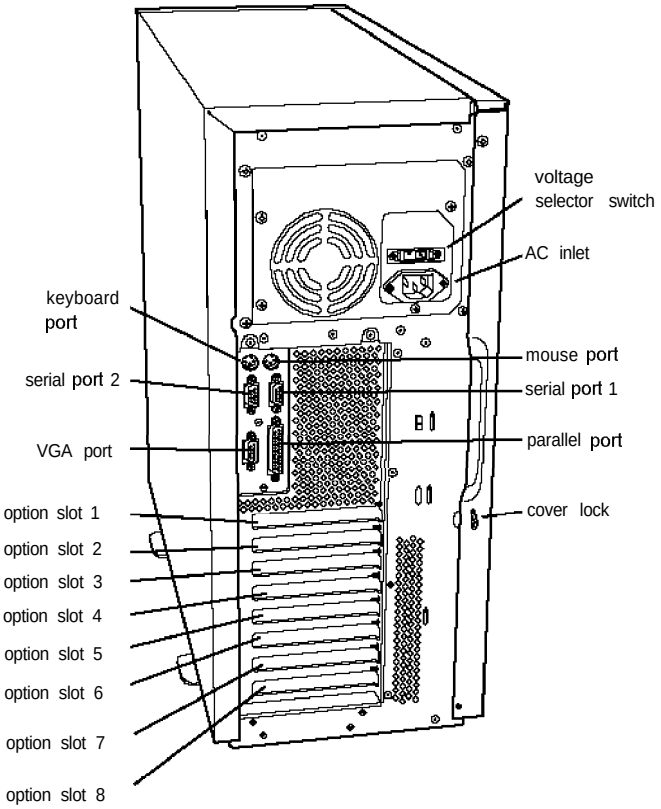
(This describes the updated PowerSpan with the red logo on the front.,





Computer Specifications

Main System Board

System memory	8MB RAM standard on two 4MB SIMMs; expandable using 1MB, 2MB, 4MB, 8MB, 16MB, or 32ME single- or double-sided SIMMs up to 128MB (maximum); SIMMs must be 80ns, 36-bit, 72-pin, tin-plated, fast-page mode type; 16ME and 32ME SIMMs may be 70ns, 36-bit, 72-pin, tin-plated, fast-page mode type
BIOS	256KE on two 128KB FLASH EEPROM devices for system and video BIOS
Shadow RAM	Automatically copies the system BIOS from ROM into RAM; shadow RAM addresses for video BIOS and external BIOS are software selectable
Video RAM	512KE standard; expandable to 1MB using four 256KE x 4, 60ns, fast-page mode video DRAM chips
Clock / calendar	Real-time clock, calendar, and CMOS RAM for BIOS use; battery backup; contents can be cleared to default values by jumper setting

CPU Card

CPU	Intel 486DX2, 66 MHz microprocessor; or Intel Pentium 60 MHz or 90 MHz microprocessor; or Intel Dual Pentium 66 MHz microprocessor; simulated 8 MHz processor speed selectable through software or keyboard command
Cache memory	8KB internal cache in the 486DX2 / 66 microprocessor; 128KB Intel cache module with write-through, two-way set associative cache memory 16KE internal cache in the Pentium / 60 and / 90 microprocessors; 256KE (Pentium / 60) or 512KE (Pentium / 90) cache module with write-back, two-way set associative cache memory Dual Pentium / 66 microprocessor contains two independent 256KB, write-back cache modules

Interfaces

Monitor	15-pin, D-shell analog connector
Serial	Two RS-232-C, 9-pin, D-shell connectors; asynchronous

Parallel	25-pin, D-shell connector; supports IBM AT compatible or PS/ 2 compatible (bidirectional) signals; software selectable
Mouse	Mini DIN, 6-pin connector for PS / 2 compatible mouse or other pointing device
Keyboard	Mini DIN, 6-pin connector for PS / 2 compatible keyboard
SCSI	Built-in TwinChannel SCSI interface; two SCSI buses, each supporting up to seven SCSI devices, including the adapter (interface)
Option slots	Eight 32-bit EISA bus master expansion slots (16-bit and S-bit ISA compatible)
Speaker	Internal; operation controllable by software

Controllers

Diskette	Controller on the main system board supports up to two diskette drives in any of these formats: 5.25-inch, high-density, 1.2MB 5.25-inch, double-density, 360KB 3.5-inch, high-density, 1.44MB 3.5-inch, double-density, 720KB
Hard disk	Interface on the main system board supports up to two IDE drives with embedded controllers
SCSI	Two SCSI-2 interfaces on main system board feature 32-bit EISA bus master interface; Twin Channel SCSI supports transfers up to 10MB per second
Video	VESA compliant VGA controller supports resolutions up to 800 x 600 in 256 colors and 1024 x 768 in 16 colors with 512KB of VRAM; supports up to 1024 x 768 in 256 colors with 1MB of VRAM

Keyboard

Detachable, two position, 101 or 102 sculpted keys; country-dependent main typewriter keyboard; numeric/cursor control keypad; four-key cursor control keypad; 12 function keys

Mass Storage Bays

Up to nine half-height devices maximum; one full-height or two half-height internal bays for IDE or SCSI hard disk drives; four half-height or two full-height internal bays for SCSI hard disk drives; three half-height externally-accessible drive bays

Physical Characteristics

Width	8.5 inches (21.5 cm)
Depth	23 inches (58.4 cm)
Height	20.4 inches (51.8 cm)
Weight	44.5 lb (20 kg) with one diskette drive only

Power Supply

Type	230W, fan-cooled, switch-selectable voltage
Input ranges	100 to 120 VAC and 200 to 240 VAC, *50* to 60 Hz
Maximum current	At 115 Volts, 5 Amps; at 230 Volts, 4 Amps
Output cables	Three main system board cables; nine mass storage power cables
+5 Volt current limitation	To determine the maximum allowable amperage of your option cards and other equipment, use the table below. It lists the typical system +5 Volt current drain for your main system board and other components. Check the +5 Volt amperage rating of the equipment you install and make sure the total system amperage does not exceed 30 Amps..

System current drain

Component	+5V amperage (typical)	+12V amperage	-12v amperage
Main system board	4.0A	.06A	.06A
Total installed memory on SIMMs	4MB 2.0A 8MB 2.1A 64MB 2.4A 128MB 2.8A	—	—
CPU cards: 486DX2/66 /w 128KB cache Pentium 60 Pentium 66 Pentium 90 Dual Pentium 66	 4.1A 5.4A 5.8A 1.2A 11.9A	—	—
CPU card integrated cache (128KB)	2.5A	—	—
3.5inch diskette drive	0.5A	—	—
EISA option slot *	2.0A	—	—
Cooling fan	—	0.3A	—

* Each EISA option slot is rated at 4.5A per slot, however average current consumption for all slots used should not exceed 3A per slot. Most EISA option cards draw 2A. If you install a card drawing more than 2A, install it in a lower numbered slot (such as 1 or 2) to ensure adequate cooling.

Maximum outputs

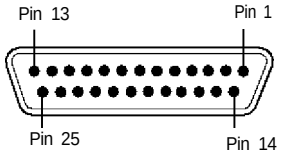
Output voltage (VDC)	Maximum continuous current (Amps)	Minimum load	Peak surge	Watts
+5	30A	3A	30A	150W
-5	0.5A	0A	0.5A	2.5W
+12	8A	0.25A	11A	96W
-12	0.1A	0A	Maximum capacitive load <350 F	12W

Environmental Requirements

Condition	Operating range	Non-operating range
Temperature	50° to 95° F (10° to 35° C)	–40° to 149° F (–40° to 65° C)
Humidity (non-condensing)	20% to 80% at 95° F (35° C)	20% to 92% at 149° F (65° C)
Altitude	To 10,000 ft (3048 m)	To 50,000 ft (15,240 m)

Connector Pin Assignments

Parallel Port Connector (JO600 top)

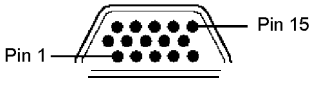


Parallel port connector pin assignments

Pin	Signal	Pin	Signal	Pin	Signal
1	STROBE	IO	ACK*	19	SIGNAL GND
2	DATA0	11	BUSY	20	SIGNAL GND
3	DATA1	12	PE	21	SIGNAL GND
4	DATA2	13	SELECT	22	SIGNAL GND
5	DATA3	14	AUTO*	23	SIGNAL GND
6	DATA4	15	ERROR*	24	SIGNAL GND
7	DATA5	16	INIT*	25	SIGNAL GND
8	DATA6	17	SELECTIN*		
9	DATA7	18	SIGNAL GND		

*Active low logic

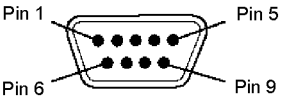
VGA Port Connector (JO600 bottom)



VGA port connector pin assignments

Pin	Signal	Pin	Signal	Pin	Signal
1	Red	6	Ground	11	NC
2	Green	7	Ground	12	NC
3	Blue	8	Ground	13	Horizontal Sync
4	NC	9	NC	14	Vertical Sync
5	Ground	10	Ground	15	NC

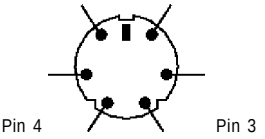
Serial Port Connectors (J0700)



Serial port connector pin assignments

Pin	Signal	Pin	Signal
1	Data Carrier Detect	6	Data Set Ready
2	Receive Data	7	Request To Send
3	Transmit Data	8	Clear To Send
4	Data Terminal Ready	9	Ring Indicator
5	Ground		

Keyboard and Mouse Connector (JO800 two-tiered)

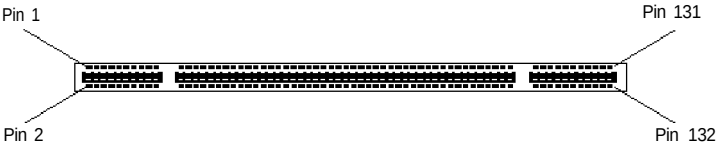


Although the keyboard and mouse connectors are physically identical, they cannot be used interchangeably.

Keyboard and mouse connector pin assignments

Pin	Signal	Pin	Signal
1	Data	4	+5 VDC (fused))
2	NC	5	Clock
3	Ground	6	NC

CPU Card Connector (J0730)



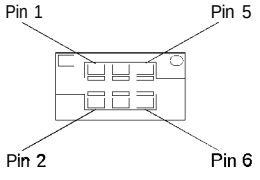
CPU card connector pin assignments

Pin	Signal	Pin	Signal
1	Hard Reset	2	Ground
3	Bus Grant	4	Soft Reset
5	Bus Request	6	64-bit operation
7	+5 VDC	8	Refresh Request
9	Allow 20 Mask	10	Refresh Demand
11	Memory bus address	12	Reset Numeric Processor Exception Error
13	Cache Flush	14	Ground
15	Write Modified Cache Entries	16	Interrupt Request 13
17	Maskable Interrupt	18	Nonmaskable Interrupt
19	+5 VDC	20	Cache Data Modified
21	Snoop Status Available	22	Snoop Strobe
23	Write Through/Write Back	24	Write Protect

CPU card connector pin assignments (continued)

Pin	Signal	Pin	Signal
25	Memory Speed 0	26	Ground
27	Memory Speed 1	28	Memory Area Cacheable
29	Lock	30	Response 0
31	+5 VDC	32	Response 1
33	Status 0	34	Ready
35	Status 1	36	Force Access Termination
37	Status 2	38	Ground
39	Ground	40	Address Strobe
41	CAS Latch Even	42	Ground
43	CAS Latch Odd	44	Odd Memory Bank Select
45	Ground	46	Even Memory Bank Select
47	Byte Enable 1	48	Ground
49	Byte Enable 3	50	Byte Enable 0
51	Address Bit 3	52	Byte Enable 2
53	Address Bit 5	54	+5 VDC
55	+5 VDC	56	Address Bit 2
57	Address Bit 7	58	Address Bit 4
59	Address Bit 9	60	Address Bit 6
61	Address Bit 11	62	Ground
63	Address Bit 13	64	Address Bit 8
65	+5 VDC	66	Address Bit IO
67	Address Bit 15	68	+5 VDC
69	Address Bit 17	70	Address Bit 12
71	Ground	72	Address Bit 14
73	Address Bit 19	74	Address Bit 16
75	Address Bit 21	76	Address Bit 18
77	Address Bit 23	78	+5 VDC
79	+5 VDC	80	Address Bit 20
81	Address Bit 25	82	Address Bit 22
83	Address Bit 27	84	Address Bit 24
85	Ground	86	Address Bit 26
87	Address Bit 29	88	Ground
89	Address Bit 31	90	Address Bit 28
91	Ground	92	Address Bit 30
93	Data Bit 1	94	Ground
95	Ground	96	Data Bit 0
97	Data Bit 3	98	Data Bit 2
99	Data Bit 5	100	Data Bit 4
101	Data Bit 7	102	+5 VDC
103	Data Bit 9	104	Data Bit 6
105	Data Bit 11	106	Data Bit 8
107	Ground	108	Data Bit IO
109	Data Bit 13	110	Data Bit 12
111	Data Bit 15	112	Data Bit 14
113	Data Bit 17	114	+5 VDC
115	Data Bit 19	116	Data Bit 16
117	Data Bit 21	118	Data Bit 18
119	Ground	120	Data Bit 20
121	Data Bit 23	122	Data Bit 22
123	Data Bit 25	124	Data Bit 24
125	Data Bit 27	126	+5 VDC
127	Data Bit 29	128	Data Bit 26
129	Data Bit 31	130	Data Bit 28
131	Ground	132	Data Bit 30

CPU Card Power and Ground Connectors (J0710 and J0770)



CPU card power and ground connector J0710 pin assignments

Pin	Signal	Pin	Signal	Pin	Signal
1	Ground	3	Ground	5	Ground
2	+5 VDC	4	+5 VDC	6	+5 VDC

CPU card power and ground connector J0770 pin assignments

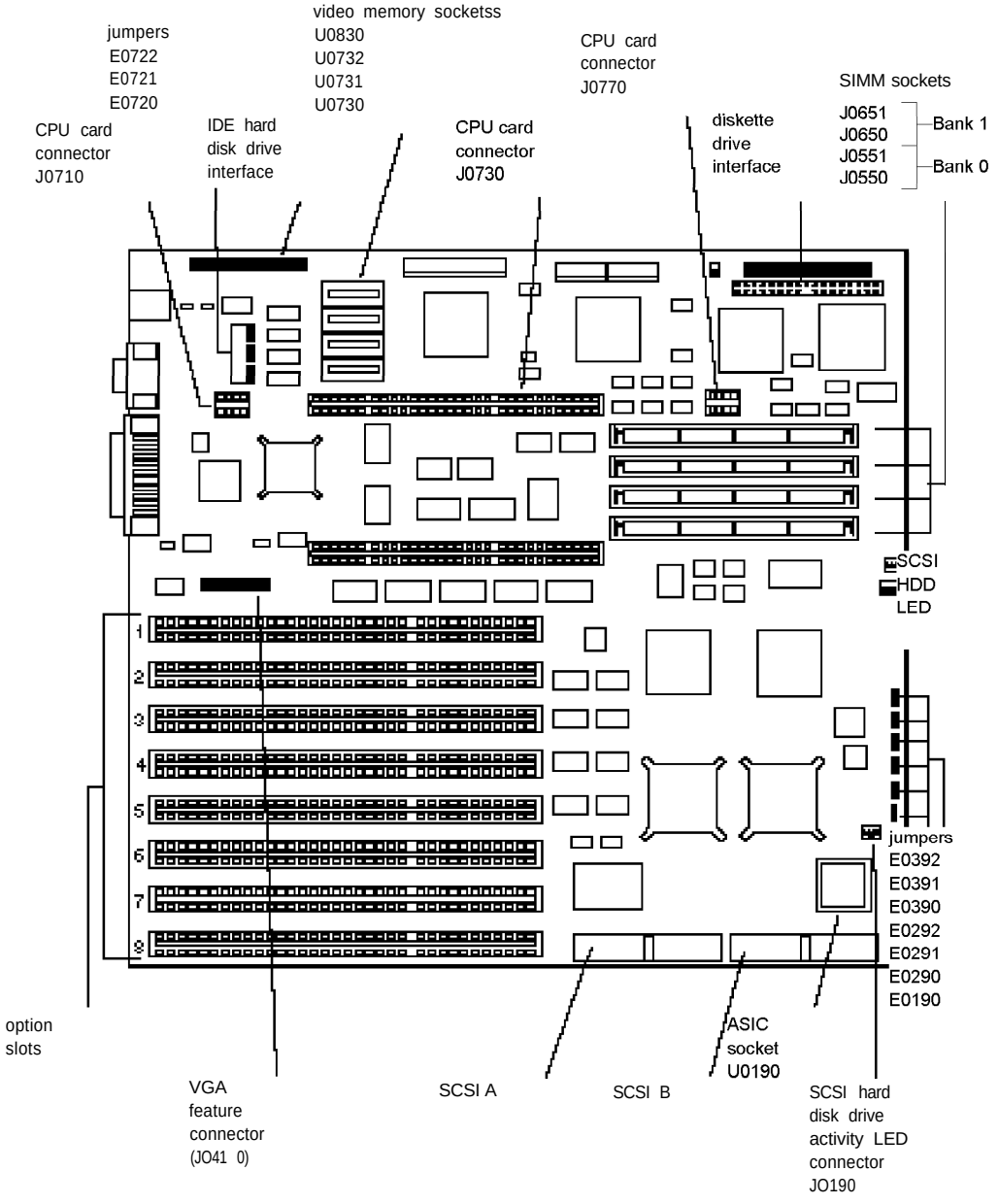
Pin	Signal	Pin	Signal	Pin	Signal
1	Ground	3	Reserved	5	Reserved
2	vcc	4	Reserved	6	vcc

SCSI Channel A and B Connectors (J0060 and J0080)

SCSI channel A and B connector pin assignments

Pin	Signal	Pin	Signal	Pin	Signal
1	Ground	18	Ground	35	Ground
2	Ground	19	Ground	36	Ground
3	Ground	20	Ground	37	Reserved
4	Ground	21	Ground	38	Termpwr
5	Ground	22	Ground	39	Reserved
6	Ground	23	Ground	40	Ground
7	Ground	24	Ground	41	-ATN
8	Ground	25	Ground	42	Ground
9	Ground	26	-DB0	43	-BSY
IO	Ground	27	-DB1	44	-ACK
11	Ground	28	-DB2	45	-RST
12	Reserved	29	-DB3	46	-MSG
13	Open	30	-DB4	47	-SEL
14	Reserved	31	-DB5	48	-CID
15	Ground	32	-DB6	49	-REQ
16	Ground	33	-DB7	50	-I/O
17	Ground	34	-DBP		

Main System Board Map



DMA Channels

DMA channels

Channel	Function
0	Option card
1	Option card
2	Diskette drive
3	IDE hard disk drive
4	Reserved
5	Option card
6	Option card
7	Option card

System Interrupts

System *interrupts*

IRQ	Device
NMI	Parity error
0	Reserved, interval timer
1	Reserved, keyboard buffer full
2	Reserved, cascade interrupt from slave PIC
3	Onboard serial pod 2 (COM2), if enabled
4	Onboard serial pod 1 (COM1), if enabled
5	LPT2, if enabled
6	Onboard diskette drive controller, if enabled
7	LPT1, if enabled
8	Real-time clock (RTC)
9	User definable; can be set for EISA option cards using the ECU
IO	COM3, if enabled; can be set for EISA option cards using the ECU
11	COM4, if enabled; can be set for EISA option cards using the ECU SCSI controller, if enabled; can be set for EISA option cards using the ECU
12	Onboard PS/2 mouse pod, if enabled
13	Reserved, math coprocessor
14	IDE hard drive controller, if enabled
15	User definable; can be set for the following (up to three choices) using the ECU: EISA option cards IDE hard disk drive controller Built-in video controller; programmable to 9, 10, II, or 15 Built-in SCSI controller; programmable to 9, 10, II, or 15

Input/output Addresses

Input/output addresses

I/O address	Device
000 - 00F	Slave DMA controller 1
020 - 021	Master interrupt controller 1
026	Configuration controller index registers
027	Configuration controller data registers
040 - 043	Interval timer 1
048 - 04B	Interval timer 2
060,064	Keyboard/mouse controller
061	NMI and diagnostic pod
070	Real-time clock
070	Enable NMI
071	Real-time clock
078	BIOS loop timer
080	Power-on diagnostic error codes
081 - 08F	DMA page register
092	System control port

Input/output addresses (continued)

I/O address	Device
OAO - 0A1	Slave interrupt controller 2
OCO - ODE	Master DMA controller 2
0F0	Reset numeric coprocessor
OF8 - OFF	Numeric coprocessor
1F0 - 1F8	IDE hard drive controller
278 - 27B	Parallel pod 2 (LPT2); parallel port 3 (PS/2-compatible)
2C0 - 2DF	Clock calendar
2E8 - 2EF	Serial port 4 (COM4)
2F8 - 2FF	Serial port 2 (COM2)
378 - 37F	Parallel pod 1 (LPT1); parallel port 2 (PS/2-compatible)
3B0 - 3BB	WD90C31 onboard video registers
3BC - 3BE	Parallel pod 3 (LPT3); parallel port 1 (PS/2-compatible)
3BF - 3DF	16C552 registers
3E8 - 3EF	Serial port 3 (COM3)
3F0 - 3F5	Onboard diskette controller
3F6	Onboard IDE hard drive controller
3F7	Onboard IDE read
3F7	Onboard diskette controller read/write
3F8 - 3FF	Serial port 1 (COM1)
400 - 40B	Extended DMA controller 1 registers
40C - 40F	Extended control/test registers
461 - 464	Extended NMI register
464 - 465	Extended bus master
480 - 48F	Extended DMA page register
4C2 - 4CE	Extended DMA 2 registers
4D0	Extended interrupt 1
4DI	Extended interrupt 2
4D4	Extended DMA 2 chaining
4D4	Extended DMA 2 write mode
co2 - co4	System baseboard configuration information
C80 - C83	System baseboard EISA ID register
C84	System baseboard enable
C85 - C87	Reserved
9*nnn* - 9FFF	Built-in SCSI controller

System Memory Map

Starting address	Hex address range	Size	Function
0KB	00000h to 07FFFh	512KB	Base memory
512KB	30000h to 3FFFFh	128KB	Base memory enabled in SETUP or the EISA Configuration utility
640KB	0A0000h to 0BFFFFh	128KB	Video display RAM
768KB	0C0000h to 0C7FFFh	32KB	Offboard video BIOS (can be shadowed) or built-in SCSI BIOS (can be shadowed)
300KB	0C8000h to CFFFFh	32KB	Adapter BIOS extensions (can be shadowed)
332KB	0D0000h to DFFFFh	64KB	Adapter BIOS extensions
896KB	0E0000h to 0E7FFFh	32KB	Built-in video BIOS (can be shadowed or mapped to 0C0000h)
928KB	0E8000h to E9FFFh	8KB	EISA Configuration utility data
936KB	0EA000h to 0EBFFFh	8KB	Reserved memory
944KB	0EC000h to 0EFFFFh	16KB	Recovery BIOS

System memory map (continued)

Starting address	Hex address range	Size	Function
960KB	0F0000h to FFFFFh	64KB	System BIOS
1MB	100000h to FFFFFFFh	15MB	Extended memory
Top of system memory	0C8000h to 0DFFFFh	96KB	Reserved for ROM and RAM expansion boards
Top of system memory	0h to 800FFFFFh	2GB + 1MB	Limit of system architecture

Jumper Settings

See the Main System Board Map on page 5 for the location of the jumpers on the main system board.

Main system board jumper settings

Jumper number	Description	Jumper setting	Function
E0190	FLASH memory	1 to 2*	Normal boot
		2 to 3	Enables FLASH memory BIOS for recovery operation
E0290	Video controller	1 to 2*	Enables onboard video controller
		2 to 3	Disables onboard video controller so you can install a video controller on an option card
E0291	Diskette write-protection	1 to 2*	Enables read-write capability (read/write mode) for any diskette drive connected to the built-in controller
		2 to 3	Enables write-protection (read-only mode) for any diskette drive connected to the built-in controller
E0292	NVRAM	1 to 2*	Normal non-volatile RAM operation
		2 to 3	Changes EISA configuration or SETUP values stored in non-volatile RAM to their default values
E0390	Password	1 to 2*	Enables power-on password
		2 to 3	Disables and clears the power-on password
E0391	SIMM Bank 0	1 to 2*	1MB, 2MB, 4MB, or 8MB SIMMs are installed in Bank 0
		2 to 3	16MB or 32MB SIMMs are installed in Bank 0
E0392	SIMM Bank 1	1 to 2*	1MB, 2MB, 4MB, or 8MB SIMMs are installed in Bank 1
		2 to 3	16MB or 32MB SIMMs are installed in Bank 1
E0720	Video memory size	1 to 2*	512KB of video memory installed
		2 to 3	1MB of video memory installed
E0721	FLASH memory write protection	1 to 2*	Enables writes to FLASH memory using the EISA Configuration utility or the SETUP program
		2 to 3	Disables writes to FLASH memory
E0722	Video controller base address	1 to 2*	Moves video controller starting address to 03C3H if you installed a card or application program that uses address 046E8H
		2 to 3	Starting video controller address is 046E8H

* Default setting

SIMM Installation

There are four SIMM sockets organized in two banks on the main system board. You can install 36-bit, tin-plated, fast-page mode, single or double-sided SIMMs with a capacity of 1MB, 2MB, 4MB, or 8MB running at 70ns or a capacity of 16ME or 32ME running at 70ns or 80ns. Check the following guidelines to ensure that you choose the correct type of SIMMs and install them properly:

- ❑ Use only 36-bit, tin-plated, fast-page mode, single- or double-sided SIMMs that operate at an access speed of 70 or 80 nanoseconds (ns). You can install 1MB, 2MB, 4MB, or 8MB 80ns SIMMs and 16ME or 32MB 70ns SIMMs.
- ❑ Fill each bank with two SIMMs of the same size.
- ❑ Install SIMMs in Bank 0 first (sockets JO550 and J0551). Then use Bank 1 (sockets JO650 and J0651).

The table below lists some sample memory configurations. You can install SIMMs in many different configurations than those listed in the table.

SIMM configurations

Bank 0		Bank 1		Total memory
J0550	J0551	J0650	J0651	
4 MB	4 MB			8 MB*
4 MB	4 MB	1 MB	1 MB	10 MB
4 MB	4 MB	4 MB	4 MB	16MB
8 MB	8 MB			16MB
8 MB	8 MB	4 MB	4 MB	24 MB
8 MB	8 MB	8 MB	8 MB	32 MB
16 MB	16 MB			32 MB
32 MB	32 MB			64 MB
32 MB	32 MB	16 MB	16 MB	96 MB
32 MB	32 MB	32 MB	32 MB	128 MB

*Standard memory configuration

Video Memory Installation

The computer comes with 512KE of video memory that you can increase to 1MB by installing four video DRAM DIP chips. The chips must be 20-pin, 256KB, fast-page mode chips that operate at 60ns access speed. You must install one chip in each empty video RAM socket.

The table bellow lists the video DRAM DIP chips that are approved for use in the computer.

Video DRAM DIP chip types

Manufacturer	Part number
Hyundai	HY534256AS-60
	HY534256ALS-60
Fuiitsu	MB81C4256A-60P
Mosel Vitalic	V53C104FP-60L
	V53C104FP-60
Samsung	KM44C256CP-6

Hard Disk Drive Types

The following table lists the types of hard disk drives you can use in the computer. Check this table and the documentation supplied with your hard disk to find the correct number for the type of hard disk drive(s) installed in your computer. You need to enter this number when you set the hard disk drive configuration in the SETUP program or the EISA Configuration utility.

Hard disk drive types

Type	Cyl	H		Sect	Size
					20MB
02, 03	—				User-definable
04	940				62MB
05	940				46MB
06	820	10	-1	17	68MB
07	918	15	-1	17	114MB
08	762	8	0	39	116MB
09	900	15	-1	17	112MB
10	977	5	0	17	40MB
11	855	5	-1	17	35MB
12	855	7	-1	17	49MB
13	978	14	–1	35	233MB
14	733	7	–1	17	42MB
16	615	4	–1	17	20MB
17	—	—	—	—	Unused
18	977	7	–1	17	56MB
19	1024	7	512	17	59MB
20	814	9	-1	32	114MB
21	968	10	-1	34	160MB
22	873	13	-1	36	199MB
23	636	16	-1	63	313MB
24	830	10	-1	26	105MB
25	751	8	-1	17	49MB
26	755	16	–1	17	100MB
27	1024	5	–1	17	42MB
28	1024	8	–1	17	68MB
29	584	16	–1	32	146MB
30	311	16	–1	63	153MB
31	989	5	0	17	41MB
32	—	—	—	—	Unused
33	965	5	–1	17	40MB
34	965	10	–1	17	80MB
35	1024	9	–1	17	76MB
36	—	—	—	—	Unused
37	830	10	–1	17	68MB
38	832	6	–1	33	80MB
39	776	8	–1	33	100MB
40	615	8	128	17	40MB
41	917	15	-1	17	114MB
42	1023	15	-1	17	127MB
43	—	—	—	—	Unused
44	820	6	-1	17	40MB
45	—	—	—	—	Unused
46	925	9	-1	17	69MB
47	699	7	256	17	40MB
48, 49	—	—	—	—	User-definable

Installation/Support Tips

System Power Requirements

The power cord must be rated for at least 125% of the current rating of the AC voltage system and must be less than 14.76 feet (4.5 meters) long to comply with the system's safety requirements. Do not use or attempt to modify the supplied AC power cord if it is not the type required for use in your region.

To avoid permanent damage to the computer, be sure the voltage selector switch is set to the correct input line voltage before you turn on the power. The computer is shipped with the voltage selector switch set to 115 VAC, which is appropriate for line source voltages between 100 and 120 VAC. If the line source voltage in your location is between 200 and 240 VAC, make sure you set the switch to 230 VAC.

Keyboard and Monitor

Even if you intend to use this system as a network file server, you need to connect a monitor and a keyboard to complete the installation. You may remove them once the installation is complete.

Mouse and Keyboard

When connecting the mouse and keyboard, be careful to plug them into the proper ports. Although they are physically identical, they are not interchangeable, and damage may occur to the ports or the main system board.

Option Cards

The order in which you install option cards depends on the type of cards you have. If you install only ISA option cards that do not have their own configuration files, install them before you connect your peripheral devices. Follow the instructions in your ISA card manual to set the card's switches or jumpers for your system.

Also install any EISA cards you plan to use before you connect peripheral devices so your EISA Configuration utility can automatically detect the cards and configure them correctly.

If you install ISA cards that came with their own configuration (CFG) files, install them after you have connected the necessary peripheral devices and run the computer's EISA Configuration utility. This allows you to add the CFG file information to your configuration so the program can give you the card's correct jumper and switch settings. Then you can set the switches and jumpers and install the card. See the documentation that came with your card(s) for more information.

SETUP Program

Use the SETUP program in your system's BIOS ROM to configure your computer only if you installed only ISA option cards that did not come with CFG files or you do not have a diskette drive or you have disabled the diskette drive. Run the EISA Configuration utility to configure the system in all other cases.

Information Reference List

Engineering Change Notices

None.

Technical Information Bulletins

None.

Product Support Bulletins

None.

Related Documentation

TM-PSPAN	EPSON PowerSpan Service Manual
PL-PSPAN	EPSON PowerSpan Parts Price List
400363600	EPSON PowerSpan User's Guide